Before each experiment, the infusion needle is sprayed with a thin coating of polytetrafluoroethylene dry lubricant (No. 889 RB; DCMC Industrial Aerosols Ltd., London, W.2) to hinder seepage of solution along the inside of the guide needle.

The technique is demonstrated by the continuous micro-infusion of noradrenaline (infusion rate 2·5 μg/μl. per hr) into the lateral hypothalamus of rat (A 5·4; L 1·8; H −2·7, De Groot, 1963) which elicits hyperphagia. It is hoped that this technique for continuous micro-infusion will be applicable bilaterally in a variety of animal species.

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Polarographic assay of monoamine oxidase

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Manometric (Davison, 1958), spectrophotometric (Weissbach, Smith, Daly, Witkop & Udenfriend, 1960), fluorimetric (Lovenberg, Levine & Sjoerdsma, 1962) and radioactive tracer techniques (Wurtman & Axelrod, 1963) have all been applied to the determination of monoamine oxidase activity. During oxidative deamination of substrates by the enzyme the oxygen consumption may be determined polarographically, using an oxygen electrode. The principle of the method is to allow oxygen to diffuse across a Teflon membrane and oxidize a platinum electrode, which results in a change in potential between this and a silver : silver chloride reference electrode. In our experiments the electrode was situated in the bottom of a perspex reaction vessel and the potential developed was monitored on a suitable pen recorder.

Monoamine oxidase activity was measured at 30° C in rat liver homogenates and mitochondrial suspensions, buffered at pH 7·4 in the presence of EDTA. In some experiments KCN was added to reduce endogenous oxygen consumption.

The following order of activity was found using different substrates: tyramine$>$ 5-hydroxytryptamine$\geqslant$dopamine$>$noradrenaline. No increase in oxygen consumption was observed in the presence of dexamphetamine or histamine. Tranylcypromine blocked tyramine oxidation at low concentrations.

The advantages of this simple technique are that it provides a rapid assay of monoamine oxidase from a wide variety of tissues, and that initial velocities for kinetic studies may be easily determined over the first 2–3 min of the reaction. The equipment is readily assembled from apparatus normally available in the laboratory and the cost of the electrode is in the region of £30.

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